

1           1.     A well service composition, comprising:  
2                 a fracturing fluid; and  
3                 a gas hydrate controller,  
4           wherein the gas hydrate controller is in an amount effective to control the formation of gas  
5     hydrates.

1           2.     The composition of claim 1, wherein the fracturing fluid comprises:  
2                 an aqueous fluid;  
3                 a water-soluble polymer; and  
4                 a cross-linking agent capable of increasing the viscosity of the fracturing fluid by  
5     crosslinking the polymer in the aqueous fluid.

1           3.     The composition of claim 1, wherein the fracturing fluid comprises:  
2                 an aqueous fluid;  
3                 a guar polymer or a derivative thereof, the polymer dispersible or hydratable in the  
4     aqueous fluid; and  
5                 a borate cross-linking agent.

1           4.     The composition of claim 2, wherein the aqueous fluid is mixed with the polymer on  
2     a ratio of about 20 pounds or less of the polymer for 1,000 gallons of the aqueous fluid.

1           5.     The composition of claim 2, wherein the aqueous fluid is mixed with the polymer on  
2     a ratio of about 15 pounds or less of the polymer for 1,000 gallons of the aqueous fluid.

1           6.     The composition of claim 2, wherein the aqueous fluid is mixed with the polymer on  
2     a ratio of about 20 pounds or more of the polymer for 1,000 gallons of the aqueous fluid.

1           7.     The composition of claim 2, wherein the aqueous fluid is mixed with the polymer on  
2     a ratio of about 40 pounds to about 60 pounds of the polymer for 1,000 gallons of the aqueous fluid.

1           8.       The composition of claim 2, wherein the polymer is a polysaccharide.

1           9.       The composition of claim 2, wherein the polymer is guar, carboxymethyl guar,  
2 carboxyethyl guar, hydroxypropyl guar, hydroxyethyl guar, carboxymethylhydroxypropyl guar, salts  
3 thereof, or mixtures thereof.

1           10.      The composition of claim 3, wherein the polymer is guar, carboxymethyl guar,  
2 carboxyethyl guar, hydroxypropyl guar, hydroxyethyl guar, carboxymethylhydroxypropyl guar, salts  
3 thereof, or mixtures thereof.

1           11.      The composition of claim 2, wherein the cross-linking agent is boric acid,  
2 organoborate, boric oxide, alkali metal borate, alkaline earth metal borate, or a mixture thereof.

1           12.      The composition of claim 1, wherein the fracturing fluid further comprises a  
2 proppant.

1           13.      The composition of claim 1, wherein the fracturing fluid further comprises a breaking  
2 agent.

1           14.      The composition of claim 1, wherein the fracturing fluid further comprises a clay  
2 stabilizer.

1           15.      The composition of claim 14, wherein the clay stabilizer is KCl or a quarternary  
2 ammonium salt.

1           16.      The composition of claim 1, wherein the fracturing fluid further comprises a pH  
2 buffering agent

1           17.      The composition of claim 1, wherein the fracturing fluid has a pH in the range of  
2 about 3.2 to about 11.0.

1           18.    The composition of claim 1, wherein the fracturing fluid has a pH in the range of  
2           about 9.8 to about 10.5.

1           19.    The composition of claim 1, wherein the gas hydrate controller is a  
2           polyglycolpolyamine.

1           20.    The composition of claim 19, wherein the gas hydrate controller further comprises  
2           a second polymer capable of controlling or minimizing the formation of gas hydrates.

1           21.    The composition of claim 20, wherein the second polymer is a homopolymer or  
2           copolymer of N, N-dialkylamineoethylmethacrylates or a mixture thereof.

1           22.    The composition of claim 20, wherein the second polymer is a homopolymer or  
2           copolymer of N-vinyl-N-alkyl amides or a mixture thereof.

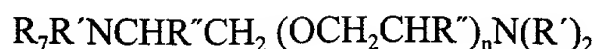
1           23.    The composition of claim 20, wherein the second polymer is a homopolymer or  
2           copolymer of N-vinyl lactams or a mixture thereof.

1           24.    The composition of claim 20, wherein the second polymer is a homopolymer or  
2           copolymer of N-methyl-N-vinylacetamide /lactams or a mixture thereof.

1           25.    The composition of claim 20, wherein the second polymer is a homopolymer or  
2           copolymer of N-acyl substituted polyalkeneimines or a mixture thereof.

1           26.    The composition of claim 19, wherein the polyglycolpolyamine is a polycondensation  
2           product of a reaction between a polyoxyalkylene glycol and a polyamine.

1           27.     The composition of claim 19, wherein the polyglycolpolyamine has the structure:



3           wherein  $R_7$  is H,  $CH_3$ , or  $-[R'NCHR''CH_2(OCH_2CHR'')_nNR']_m-R'$ ;

4           wherein  $R'$  is H or  $CH_3$ ;

5           wherein  $R''$  is H or  $CH_3$ ;

6           wherein  $n$  is 1 to 99; and

7           wherein  $m$  is 0 to 99.

1           28.     The composition of claim 1, wherein the gas hydrate controller is from about 0.01  
2     to about 5% by weight of the water in the composition.

1           29.     The composition of claim 1, wherein the gas hydrate controller is from about 0.05  
2     to about 1% by weight of the water in the composition.

1           30.     The composition of claim 1, wherein the gas hydrate controller is from about 0.03  
2     to about 0.75% by weight of the water present in the composition.

1           31.     A method of fracturing a subterranean formation comprising:  
2             obtaining a well service composition comprising a fracturing fluid and a gas hydrate  
3     controller, said gas hydrate controller being present in said composition in an amount effective to  
4     control the formation of gas hydrates;  
5             injecting the well service composition into a borehole to contact at least a portion of the  
6     formation by the fracturing fluid under a sufficient pressure to fracture the formation.

1           32.     A method of servicing a subterranean formation comprising:  
2             injecting a gas hydrate controller comprising a polyglycolpolyamine into a borehole that has  
3     been treated with a fracturing fluid.

1           33.     The method of claim 32, wherein the gas hydrate controller further comprises a  
2     polymer capable of controlling or minimizing the formation of gas hydrates.

1           34.     The method of claim 33, wherein the polymer is a homopolymer or copolymer of N,  
2 N-dialkylaminoethylmethacrylates or a mixture thereof.

1           35.     The method of claim 33, wherein the polymer is a homopolymer or copolymer of N-  
2 vinyl-N-alkyl amides or a mixture thereof.

1           36.     The method of claim 33, wherein the polymer is a homopolymer or copolymer of  
2 N-vinyl lactams or a mixture thereof.

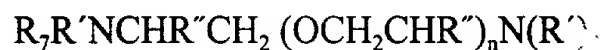
1           37.     The method of claim 33, wherein the polymer is a homopolymer or copolymer of  
2 N-methyl-N-vinylacetamide /lactams or a mixture thereof.

1           38.     The method of claim 33, wherein the polymer is a homopolymer or copolymer of  
2 N-acyl substituted polyalkeneimines or a mixture thereof.

1           39.     The method of claim 33, wherein the polymer is a homopolymer or a copolymer of  
2 N,N-dialkylaminoethylmethacrylates, N-vinyl-N-alkyl amides, and N-vinyl lactams, N-methyl-N-  
3 vinylacetamide /lactam copolymer, an N-acyl substituted polyalkeneimines or a mixture thereof.

1           40.     The method of claim 32, wherein the polyglycolpolyamine is a polycondensation  
2 product of a reaction between a polyoxyalkylene glycol and a polyamine, or a mixture thereof.

1           41.     The method of claim 32, wherein the polyglycolpolyamine has the structure:



3           wherein  $R_7$  is H,  $CH_3$ , or  $-[R'NCHR''CH_2(OCH_2CHR'')_nNR']_m-R'$ ;

4           wherein  $R'$  is H or  $CH_3$ ;

5           wherein  $R''$  is H or  $CH_3$ ;

6           wherein  $n$  is 1 to 99; and

7           wherein  $m$  is 0 to 99.

1           42.     The method of claim 32, wherein the gas hydrate controller is from about 0.01 to  
2     about 5% by weight of the water in the composition.

1           43.     The method of claim 32, wherein the gas hydrate controller is from about 0.05 to  
2     about 1% by weight of the water in the composition.

1           44.     The method of claim 32, wherein the gas hydrate controller is from about 0.03 to  
2     about 0.75% by weight of the water present in the composition.

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